

WOODS'

Hammock Splint,

FOR ALL

Fractures of the Leg and Thigh,

BY

J. T. WOODS, M. D., TOLEDO, O.

18
Caveat Filed January 8th, 1874.

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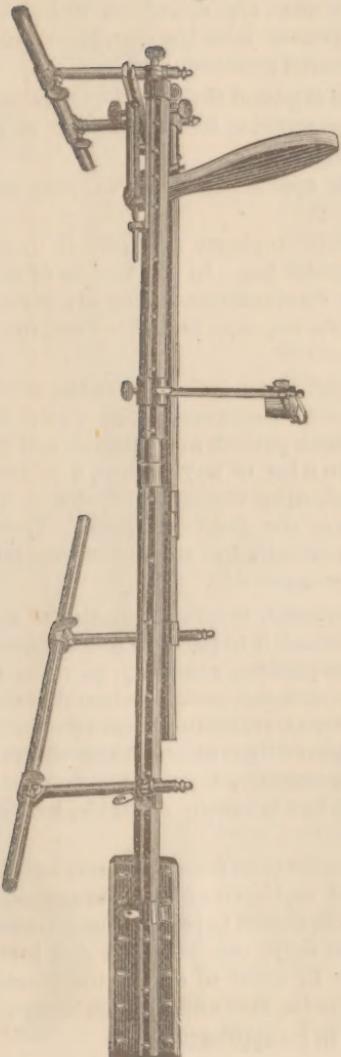
Woods' Hammock Splint,

FOR ALL FRACTURES OF THE LEG AND THIGH.

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By J. T. WOODS, M. D., TOLEDO, OHIO.

Fig. 1.



Explanation of Construction.

1st. Two rods supported by metallic uprights, the long one of which corresponds to the long splint of Desseault, and the short one extending from the perineum to below the foot, constitute, with the attachments, an elevated frame-work.

2d. On the outer side of each of these rods, their entire length, are inserted angular hooks, with their points projecting downward.

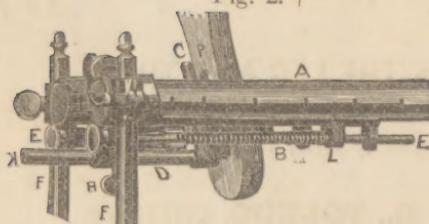
3d. On the upper end of the long rod is a movable pad, corresponding to the same part of the long splint of Desseault.

4th. These rods are so attached to the metallic uprights that they are easily removed, and by means of a clamp attachment, they may be raised or lowered on the uprights, and securely fastened at any desired point.

5th. The uprights are attached at their base to a small rod on which they slide, and to which they may be fastened at any desired point, thus securing *lateral adjustment*.

6th. The irrigator frame may be fastened by its set screw at any point on either of the long rods. From this a cup may be suspended, by which means irrigation with either cold or warm water, or medicated fluid, may be applied by the aid of a piece of cotton wicking as a siphon, without interfering with the bed clothing. This can be applied and removed at pleasure.

Fig. 2. /



7th. The foot extremity of the apparatus is more perfectly shown in Fig. 2, in which A is one of the long rods and F F the uprights supporting them. The circular clamp around the end of these rods has a bar running back at the bottom of the rods A, which loosely supports the metallic rods E E. On the rods E E a thread is cut on which the bur L travels, when the rods are turned as a screw. B is a coiled wire spring surrounding the rods E E, and extending between the bur L and the cross-bar D. This cross-bar, better shown in Fig. 1, is provided at either end with a slot through which the rods E E pass, and on which it is free to move, the spring, of course, causing it to be pushed from the bur, this spring power being used in practice for producing the desired *extension*.

8th. K C is an angular rod, one end of which is passed through the cross-bar, and on the other the foot-piece P is placed, thus securing its adjustability, as it can be fastened securely at any point by its clamp.

9th. It will be noticed that by the most simple appliances the splint-rod are adjustable at any point *laterally* or *perpendicularly*.

10th. These rods being removed from the metallic supports, and turned "end for end," the same splint is adapted to the opposite leg. In the middle of the rods will be seen an attachment, and by various combinations of the six pieces that constitute the set, a dressing can be produced for any size, and either leg, from the boy six years old to the tallest adult.

The above is an outline description of an apparatus which is the result of an effort on the part of the inventor to make for his own use an instrument that would be durable, compact, convenient and satisfactory to both patient and surgeon, and in which any form of fracture in either leg, and in a leg of any length, a perfect dressing may be quickly effected, and in which *after dressings require no removing of appliances or the least disturbance of the fractured parts*. These results are practically attained; in addition to which, the surgeon cannot fail to feel perfectly secure and the patient absolutely comfortable.

A fractured leg or thigh, especially if it be compound, is surely a matter of too much importance to both surgeon and patient to submit it to packing in a hot fracture box, or lashing it to a strip of board with the padding necessary to make it durable, and which, for purpose of inspection, require such manipulation that the fractured bone will be jostled about, and any efforts at reparation thus interfered with. The ability to examine any part of the injured limb at any time without its disturbance, and without interfering with the extension, is certainly very important, and perfect control of the positions of the foot is equally desirable, both of which are secured in this appliance.

This instrument is *really simple*, but as it is adapted to so many purposes and to meet so many indications by purely mechanical management, its various uses and the method adopted for effecting certain results, should be perfectly understood before its use is attempted. By this preparation only, can bungling and inefficiency be avoided, in this or any other method. In order to enable the practitioner to readily acquire this information, the following cuts and detailed description are given, which constitute a complete guide in its application.

Fig. 3.

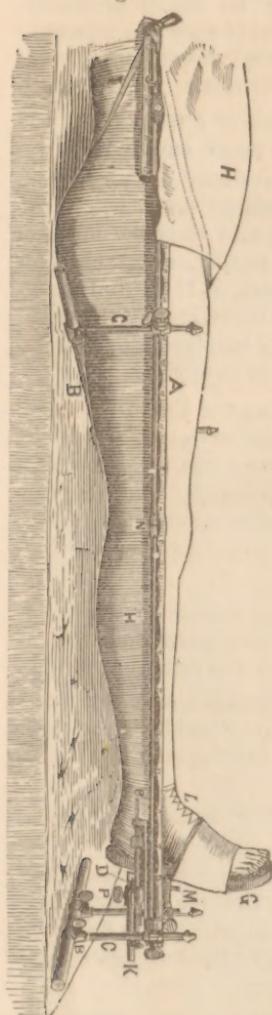


Fig. 4.



placed around the middle of the roller bandage or cord C C, as shown in Fig. 4, in such manner that the narrow end of A laps onto B and is stitched fast to B alone

as shown at D, while B is passed onto A and stitched to A alone as shown at E. This arrangement secures flexibility for adjustment around the leg and the strength desired. Of these a pair are used and are applied to the leg as shown in Fig. 5, in which B B are the tails of bandage of one side, while E and the lower is A one of the adhesive strips and D and upper A the other, C C being the adhesive strips from the other side, the tails of bandage corresponding to B B not being shown in the figure. It will be found that no bandaging of the foot or bandage to cover

Dressing of Fractured Femur.

Fig. 3 shows the right leg placed in the Hammock Splint as used in fracture of the Femur.

1st. The splint being put together for the right leg, the position of the foot uprights is determined, so that if the upper end of the inside rod be placed near the perineum, they will be about six inches beyond the heel.

2d. Place the body pad in position so that it shall rest upon the side above the ilium.

3d. A piece of good *unbleached* and *unstarched* muslin one yard or more wide is obtained, of the length of the limb from the heel to the upper part of the body pad.

4th. One side of this is fastened into the hooks of the long rod, at about the position where the heel will rest. The cloth is drawn tense and hooked at the other end of the same rod. Leaving enough cloth to form the hammock for the limb between the splints, it is in the same manner fastened to the short splint rod.

5th. The cloth is now cut off along the short rod to its perineal extremity, and making a small sweep to clear the anus, is carried outward so as to form of the cloth an L shaped bandage. The "Hammock cloth" is now hooked along the sides of both rods.

6th. The means of extension preferred, are now applied to the limb. That by adhesive plaster is undoubtedly the best, and I have found that when made as shown in Fig. 4, it answers in a superior manner. C C is a piece of roller bandage pressed together in the middle, or a piece of firm cord may be used instead. A A and B B are two strips of adhesive plaster, about $1\frac{1}{2}$ inches wide and of the length desired. One end of each is turned inward on each side so as to make this part both narrow and strong. They are now

Fig. 5.



fracture, the tails B B being made correspondingly longer, and thus the malleoli be left entirely free from pressure. A slit should be cut in the Hammock cloth for the tails on either side at a proper distance below the plaster, at E D, and carrying them through it to the outside, join them with their mates around the cross-bar, thus affording the 'patient entire comfort without any bandaging or batting. *Shave the hair off of all parts to which adhesive plaster is to be applied.*

7th. The leg is now placed in the Hammock, the upper end of the inside splint rod near the perineum, and the foot about six inches from the cross-bar. The short leg of the hammock cloth (H Fig. 3) is now carried around the abdomen and fastened to the hooks of the long splint from where it started. The foot-piece rod, K, being run back in the cross-bar, the latter is pushed against the springs as far as desired, and held by an attendant while the two tails of bandage are tied around its outer end on either side.

8th. The foot-piece is now placed in position and pushed forward to the foot, which is to be securely fastened to it by roller bandages. The proper position of the toes secured, it is fastened in position by the set screw of the foot-piece rod.

9th. The leg should be let well down in the Hammock, and if at any point the muslin does not fit accurately to the limb, a few slits cut into the side of the cloth will enable the surgeon to so hook it fast that it will lie supported without a wrinkle from heel to chest.

10th. If at any time any part becomes too high or too low, it may be adjusted by unhooking and raising or lowering the Hammock.

11th. If the fracture be compound, or if any fluid dressing is used, the Hammock may be cut partly across on the bottom of the leg, in three or four places, about an inch apart, (mere slits, as shown in Fig. 6) through which the fluid will drain. This may be received in a basin or oil cloth, and with the latter conveyed into a vessel beneath the bed.

12th. Always place a long thin board beneath the splint from one cross-rod to the other, so as to keep them from sinking into the bed, and thus keep the leg entirely free and clear.

13th. In treating a fractured thigh with this or any other instrument, a good, *firm mattress* should be placed on *a firm bed bottom*, as of boards, to prevent sagging of the body. In any case it must be of sufficient length without cramping of the instrument, and it is often best to make a bunk of scantling and boards.

14th. The body band should be kept tight, and the leg evenly suspended when it will be seen that the *nates afford a great basis of counter-extension*, often sufficient, but it is best as a precaution to apply the perineal band in the usual mode, though it is never necessary to make it so tight as to cause any discomfort.

15th. The stretching of the attachments may in time exhaust the extension

these adhesive plasters will usually be found necessary, and that if they are smoothly applied no slipping or excoriation will occur.

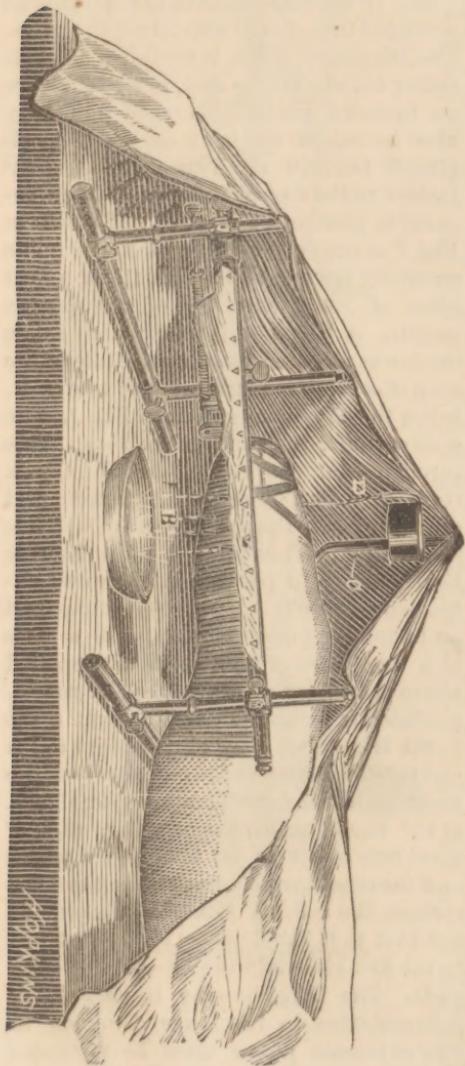
In case of a fracture in the thigh these extension strips of plaster may be applied at any desired point below the

power of the springs, when the foot-piece should be loosened and the cross-bar again pushed up, held, and the extension bands tied around it short, as in the first dressing. The bur L on the spring-rod may also be used to control the tension by turning the rod, either lessening or increasing it.

16th. Always see to it that all the screws are close set, and the clamps securely holding the rods in place.

17th. In case the upper fragment tilts upward, it may readily be brought into line with the lower fragment by raising the Hammock cloth that supports the lower and lowering that which supports the upper. In fracture of the Femur no attempt should be made to raise the thigh abruptly from the bed but by a

Fig. 6.



gradual inclination from the nates to the heel. Any lateral deviation is easily and effectually corrected by placing one strip of muslin about four inches wide beneath the leg immediately above and another below the fracture. Fasten one end of each of these strips to the hooks on the side toward which it is wished to draw that end of the bone, then carry the other end over the leg, produce the necessary traction and fasten to the hooks on the opposite side, at any point, so that the strip lies on the leg perfectly smooth. By these methods all may be done that any lateral pressure can do and will be perfectly satisfactory, no batting or pads being used.

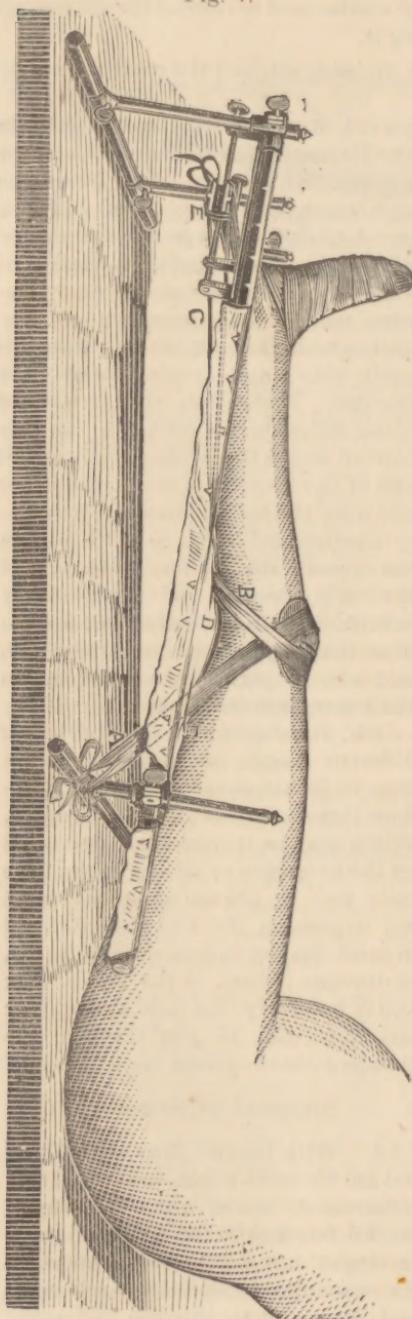
18th. In adapting the splint to legs of different length, the varied combinations of its six pieces of large rod produce three splints of different lengths, which may be increased or decreased by the extension or sliding back of the body pad, by the use of the foot-piece rod in pushing the foot-piece forward to meet the foot in case of a shorter leg, or drawing it back in the longer one; and if necessary, the rods at the lower end may also be run through the clamps without causing inconvenience.

Support of Stump.

1st. With the two parts of the short rod an elevated frame can readily be constructed, across which a piece of muslin fastened to the hooks will form an elegant and comfortable support for the extremity of an amputated limb, and attaching to this the irrigating

apparatus, lotions, cold or warm, may be applied, if desired, or if not, it serves perfectly to protect the limb from

Fig. 7.

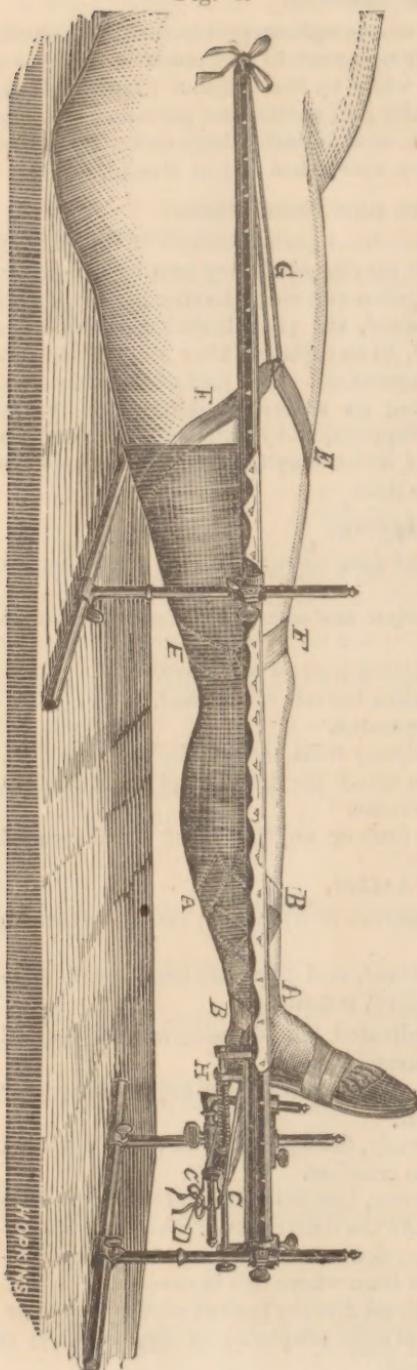


the bed clothes, as shown in Fig. 6, in which the irrigator O, and the siphon D, are shown, as well as the service of the frame in protecting the clothing, for which purpose the irrigator frame may be used by simply removing the cup. B shows the slits through the Hammock cloth and the fluid dropping into a pan beneath.

Fractured Patella.

1st. In fractured patella the splint is so arranged that it will extend to the nates. The Hammock cloth is stretched across it rather tensely at the foot, so as to secure an inclined plane. The foot end may also be raised up by means of a block placed beneath it. The foot being attached to the foot-piece and the thigh secured in position by a roller, not shown in Fig. 7, a strip of adhesive plaster is made secure by sewing to the middle of a firm piece of roller bandage of the proper length. A firm pad is now placed below the lower fragment, and the middle of the strip of adhesive plaster applied over it, below the patella, as shown in Fig. 7. The ends of the strip of bandage are made to pass through openings cut in the Hammock cloth, as shown for one side in the cut and are made fast to the rod, one end of which is shown at A. Thus the lower fragment is held securely in position and counter-extension secured. A corresponding pad and adhesive plaster sewed in the middle of a firm piece of bandage is now applied above the upper and displaced fragment, as shown at B, and passing through a slit in the Hammock cloth at D, either tail is carried downward to the outer end of the cross-bar on the corresponding side, shown at C. For convenience of tying, each of these tails is slit at its lower extremities and the cross-bar being pushed against the springs, the tails on either side are made fast to it at E E. The foot is now fastened to the foot-piece and the dressing is complete. The irrigator may be used if the inflammation in the knee demands it. The extension power must be regulated

Fig. 8.



to meet the demands of the surgeon and the endurance of the patient. As much or as little as desired, may be readily secured.

Fractured Leg.

1st. In fracture of the leg it is not usually necessary to apply the full length splint with body pad. The apparatus is especially adjustable to meet this indication, as is shown in Fig. 8, by which it will be seen that the same form of Hammock and extension are used, with the counter extension effected by adhesive plaster strips formed as described for extension, but one being used. E E is the upper strip and F F the lower, while G is the tails tied to the end of the splint rod. This permits the patient to sit up in bed, and the whole frame-work might be suspended, if wished, without interfering with the extension and counter extension or producing any displacements, although the limb be nearly bare and exposed for inspection.

2d. In arranging the apparatus for this fracture the inside rod should extend a little above the knee, and the outside should be longer to secure efficient counter-extension.

3d. The adhesive strips used for extension may always be allowed to extend from *one to two inches* above the point of fracture without any detriment, as the skin will readily stretch so as not to interfere with the bringing of the fractured extremities into apposition.

4th. In a fracture near the ankle the foot may be fastened direct to the foot-piece by adhesive plaster, omitting the method heretofore described, but if care be exercised in applying the latter, they may be made short and yet adhere sufficiently by covering the foot and them with a many-tailed bandage.

5th. The foot-piece can be rotated laterally on the rod C, Fig. 3, and fastened there, if deemed necessary to secure better apposition of the fragments, in fractures of any part of the limb, but especially when near the ankle.

Erysipelas or Abscess.

25th. The adaptability of the apparatus as a simple support in case of erysipelas or abscess of the leg or thigh will be readily apparent to any practitioner, as coolness and easy accessibility are attained while by the irrigator frame-work the bedding may be entirely protected. For this purpose the foot-piece and cross-bar may be removed, and the Hammock made as wide and as high or low as desired, so as to simply support the diseased limb on a stretched web of muslin.

Compound Fractures and Resections.

In *compound fractures*, *abscesses* and *resections* perfect control of the limb is

Fig. 9.



secured with easy access to any part as is shown in Fig. 9, the Hammock cloth having been slit down as far as desired, the piece included is unhooked and lowered, to be replaced after the requisite inspection or operation. The part of the Hammock cloth covering an abscess or slough may be removed and supplanted by strips of roller bandage, any piece of which may be removed and replaced

at will without the least disturbance of the limb.

Recapitulation.

1st. Have a *firm bed* on a bedstead or bunk long enough. Do not use a fractured bed or any bed with a "trap."

2d. Shave off all hairs where the extension and counter-extension strips are applied.

3d. Apply the extension and counter-extension strips with care.

4th. Have the splint extend six inches below the sole of the foot.

5th. Let the limb well down into the apparatus.

6th. In fracture of the thigh elevate gradually from nates to the heel.

7th. Never apply cotton or other packing about the limb. Open and close the instrument as the swelling increases or decrease.

8th. Never apply bandages around the limb or anything but the Hammock cloth as described.

ADVANTAGES.

1. An easy position; avoidance of all sources of irritation; coolness resulting from suspension without bandaging.

2. A controllable extension that is constant, and therefore need not be sufficient to cause pain. The muscles once relaxed, remain so.

3. The facility with which simple or medicated fluid dressing may be applied, and the adjustability of the irrigating apparatus.

4. The whole limb being under the eye, and the foot-piece adjustable, perfect relation of the foot may always be attained.

5. The instrument being adjustable laterally, the leg should never be removed from it until the patient is able to get up on crutches.

6. The period of recovery is rendered shorter, because of the absolute quietude of the fractured extremities of the bone. As the limb is never moved for redressing, the reparative material is not broken down from time to time, and consequently far less provisional callus is formed than where this is necessary.

7. The ease with which a *bed pan* may be used, or the patient moved if need be.

8. The instrument is always ready, and at once adaptable to any case. It is compact, being put up in a box 27 inches long.

9. The rapidity with which the dressing can be applied, the absolute security felt by the surgeon, and the comfort of the patient.

10. The adaptability of the same apparatus to either leg, and to persons of any size.

11. A patient placed in this apparatus may be moved either in wagon or by cars without discomfort or detriment and by the latter means for almost any distance.

PRICE.—With wooden rods, brass supports, &c., in box, \$50.00. With silver plated trimmings, \$75.00

Letters or orders will receive prompt attention. Agents wanted. Address,

J. T. WOODS, Toledo, Ohio.

Parties interested are requested to communicate with any of the gentlemen whose endorsements are given below.

TESTIMONIALS.

After thoroughly examining "Dr. Woods' Hammock Splint," we are of the opinion that it is an indispensable instrument for the treatment of all fractures of the leg and thigh. The limb is not covered with bandages, and is fully in view at all times. The leg, thigh, nates and back are supported on one continuous piece of canvass, without a wrinkle, the leg and thigh being clear of the bed. The extension is uniform, continuous and controllable. The foot board is adjustable in all requisite directions, and the instrument is adaptable to all fractures of either leg in persons of all sizes. The whole is put up in a small box 27 inches long, and therefore very convenient. It is what it purports to be - a "Hammock Splint" and cannot fail to meet the wants of the Surgeon, and will positively render the patient comfortable. It is one of the most valuable of recent contributions to Mechanical Surgery.

P. THAYER, M. D.,

Prof. of Surgery in Cleveland Med. College.

XEN. C. SCOTT, M. D.,

Prof. Ophthalmology and Otology, Cleveland Med. Col.

JOHN DARBY, M. D.,

Prof. Materia Medica and Therapeutics.

FRANK WELLS, M. D.,

Prof. Obstet. and Diseases of Women and Children, Cleveland Med. College.

JOHN BENNETT, M. D.,

Prof. Prin. and Practi. Med., Cleveland Med. College.

CLEVELAND MEDICAL COLLEGE,
Cleveland, Ohio, May 1st, 1873.

**MAYOR'S OFFICE,
TOLEDO, O., June 4, 1873.**

To WHOM IT MAY CONCERN:

I am familiar with the fracture splint invented and made by Dr. J. T. Woods, of this city.

This splint for all purposes for which a fracture splint is used, is the most perfect and best adapted of any that has heretofore come to my notice. It is the only one by which I have been able to dispense with a regular fracture bed where the limb required perfect rest to obtain union.

Very Respectfully,

W. W. JONES, M. D.

TOLEDO, O., June 15, 1873.

J. T. WOODS, M. D.,

Dear Sir:—I take great pleasure in testifying to the value of your Splint for treating fractures of the lower extremities. Having examined it carefully and seen it applied and used throughout the management of several and varied cases of compound fracture of the lower limbs, I do not hesitate to say that it is the best apparatus for maintaining proper adjustment of the fractured surfaces, and securing the comfort of the patient that I know of.

I sincerely hope for the sake of surgeons and patients, that your invention, skill and philanthropic efforts will be rewarded by the general adoption of your splint by the profession.

Yours truly,

J. W. BOND, M. D.

FINDLAY, June 23d, 1873.

J. T. WOODS, M. D.,

Dear Sir:—Contrary to our usual custom—knowing that so many new inventions are worthless—we take pleasure in bearing our unqualified testimony and approval of your "Hammock Splint," for dressing and treatment for all fractures and dislocations of the lower extremities. We have recently applied one of your splints in dressing a comminuted fracture of Femur—upper third and are so well pleased, both in the readiness of application, simplicity of construction, the ease with which it is worn by the patient, and its complete adaptability to the demands and successful treatment of such difficult cases, that we cheerfully bear this unsolicited testimony of its real merits, and heartily recommend it to the thoughtful and unprejudiced attention of the profession, as a meritorious application of true scientific principles in the treatment of the class of fractures and accidents for which the apparatus is designed.

A. HURD, M. D.,

F. W. FIRMIN, M. D.

J. T. WOODS, M. D.,

Dear Doctor:—I have seen the splint devised by you called the "Hammock Splint," applied to cases of compound fracture, one of the leg and one of the thigh; and it affords me pleasure to say that I am extremely well pleased with it as a means of retention and for making extension, at the same time affording easy access to and complete observation of any part of the limb. The perfect ease and freedom from fatigue with which it is worn by the patient, its security from becoming displaced, and the excellent arrangement for automatic irrigation are among its good features.

I can with confidence recommend it to surgeons as the best Splint I have ever seen.

Respectfully yours,

W. T. RIDENOUR, M. D.

TOLEDO, OHIO, June 23d, 1873.

MY DEAR DOCTOR: It affords me much pleasure to add my testimony to that of others, with regard to the efficiency of the "Hammock Splint." I have seen its application, and the results thereof, with great satisfaction; and I believe it to be the best apparatus yet devised for the purpose for which it is intended.

In this connection permit me to thank you for preparing, for my use, in a recent case of amputation, a modification of your Splint as a rest for the stump. It pleased me much, and the patient (if possible) still more.

Wishing you every success in the introduction of your invention to the notice and use of the members of our profession,

I am very respectfully, yours truly,

J. M. COOKE, M. D.

J. T. WOODS, M. D., Toledo, Ohio.

RANDOLPH, O., June 20th, 1873.

A very ingenious splint for fractures of the lower extremities, has been invented by Dr. J. T. Woods, of Toledo, and in my opinion it will come into general use, as the indications are fulfilled with it, that the Profession has felt a want of for many years; such as freedom of the heel and ankle from pressure, with constant extension and counter-extension easily applied, with no heat from cumbersome dressings.

J. PRICE, M. D.

STRYKER, WILLIAMS Co., O., April 20th, 1873.

J. T. WOODS, M. D.,

Dear Sir:—The "Hammock Splint" purchased of you, I have used with the utmost satisfaction. The great terror of treating fractures of the leg and thigh is with it entirely dissipated. Without pain to the patient, without excoriating of any part and without any danger of sloughing of the heel, the surgeon has perfect access to and complete control of the limb. While it is easily and quickly applied, its action is perfect. The irrigating apparatus is invaluable, serving also to keep the bed clothing off the limb. I would not do without it, and no physician can, who would do justice to his patients. You have by this invention done a vast service to the profession and to those who may be unfortunate enough to suffer from fractures of the leg or thigh.

D. P. ALDRICH, M. D.

TOLEDO, O., May 3d, 1873.

J. T. WOODS, M. D.,

Dear Doctor:—Having used your "Hammock Splint" in several cases of both simple and compound fracture of the leg and thigh, we feel entitled to an opinion, and have no hesitation in pronouncing it the best apparatus in use for the purpose. It is easily and quickly applied, and when the limb is dressed, the surgeon at once feels safe. Defects of position can be in a moment rectified, as the limb is in full view. The extension is sufficient, but gentle, continuous, and entirely at the control of the surgeon. All sources of undue heat and irritation from pressure are avoided. While everything is attained that the surgeon could wish, the patient is absolutely comfortable. When once acquainted with its usefulness, no surgeon would be without it, and when the public learn its benefits, patients will endure no other.

GEO. W. BOWEN, M. D.,

late Surgeon U. S. V.

J. GREENE, M. D.

SAMUEL S. THORN, M. D.

SCHUYLER, COLFAX Co., Neb.,

April 1st, 1874.

J. T. WOODS, M. D.,

Dear Doctor:—Some time since I procured one of your "Hammock Splints," and have treated in the same instrument one oblique fracture of the Femur in the adult, one oblique fracture of the Femur in a boy *four years old*, and one fractured patella, with the utmost satisfaction to both myself and patients. In fact, I could not dispense with it. It affords all that is needed by the surgeon in every conceivable way. To the patient it is a marvel of comfort, and they only wonder why they suffer no pain. You have conferred a like benefit upon the practitioner and suffering humanity.

Very truly,

JAMES WOOD, M. D.

94 CASS ST., DETROIT, MICH., March 28, 1874.

J. T. WOODS, M. D.,

Dear Doctor:—Your apparatus for treating all fractures of the lower limbs is very complete, and, so far as I have been able to see or learn, in every respect satisfactory. With the greatest facility it can be made to meet any indications which may arise in the treatment of such fractures.

Cordially yours,

LEARTUS CONNOR, M. D.

Prof. Physiology, &c., Detroit Medical College.

I fully concur in the statement of Prof. Connor.

E. N. JENKS, M. D.

Prof. Medical and Surgical Diseases of Women, &c., Detroit Med. College.

DETROIT, April 7th, 1874.

DR. J. T. WOODS,

Dear Doctor:—I have examined your Hammock Splint and take pleasure in expressing my conviction that it will be a valuable addition to the means which we have at our disposal for the treatment of fractured bones. I believe that it will prove especially useful in compound fractures of the Femur and exsections of portions of that bone. I shall give it the test of actual trial, and will then report to you the result.

Yours Very Truly,

THEO. A. McGRAW,

Professor Surgery Detroit Medical College.

J. T. WOODS, M. D.

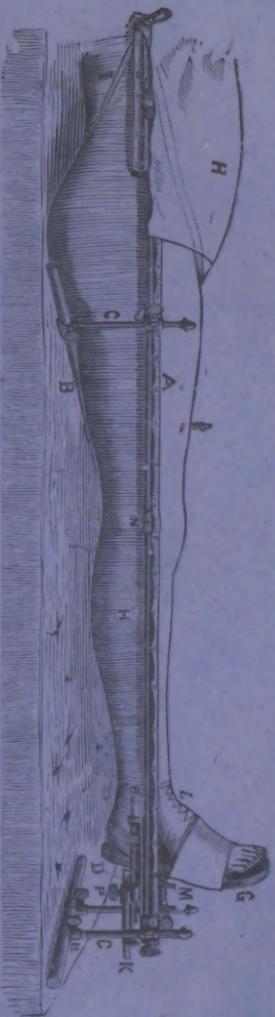
Dear Sir:—My observations and experience in the use of your Hammock Splint for fractures of the leg and thigh warrants me in affirming that for that purpose it has no equal. It is so simple, comfortable and efficient that nothing more is required. With it fractures of the leg and thigh can be treated without fear, and many cases saved in which amputation would otherwise be unavoidable.

Very Truly,

J. W. SOUTHWORTH, M. D.

INDIAN AGENCY, FORT BERTHOLD,

Dakota Territory, April 3, 1874. }



Each Instrument is adapted to any Fracture of the Leg or
Thigh—Either Leg, and Leg of any length.

PRICE, \$50:00.

EXTRA, \$75:00.

Address,
J. T. WOODS,
TOLEDO, OHIO.